

REMARKS

In this paper, claims 1, 7, 24, 31, 35, 38, 47 and 48 are currently amended. After entry of the above amendment, claims 1-36, 38-39 and 41-48 are pending, claims 37 and 40 have been canceled, and claims 3, 5, 11-13, 16-18, 26-30, 33 and 34 have been withdrawn from consideration.

Claims 38 and 46 were rejected under 35 U.S.C. §102(b) as being anticipated by UK 4599. This basis for rejection is respectfully traversed.

UK 4599 discloses a divided crank axle assembly for bicycles wherein cranks B, B¹ each are made one piece with substantially one-half of a crank axle C that extends into the bottom bracket shell (crank hanger) A of the bicycle.

Claim 38 has been amended to clarify that the crank arm recited therein does not form part of a crank axle dimensioned to extend into a bottom bracket shell of the bicycle. This is completely different from the arrangement shown in UK 4599. In fact, UK teaches away from such an arrangement because the whole purpose of the '4599 patent is to construct a split axle that can be affixed together using the crank arms as tightening structures.

Claims 1-2, 4, 8-12, 14-15, 19-20, 31, 39 and 47 were rejected under 35 U.S.C. §103(a) as being unpatentable over UK 4599 in view of FR 1,028,488. This basis for rejection is respectfully traversed.

Like claim 38, independent claims 1, 31 and 47 have been amended to clarify that the crank arm recited therein does not form part of a crank axle dimensioned to extend into a bottom bracket shell of the bicycle. That is directly opposite the purpose of the device shown in UK 4599, and there is nothing in FR 1,028,488 that would motivate one of ordinary skill in the art to modify the device disclosed in UK 4599 in a way that would still retain the objective of that reference.

Claims 32 and 36 were rejected under 35 U.S.C. §103(a) as being unpatentable over UK 4599 in view of FR 1,028,488. This basis for rejection is respectfully traversed.

A proper obviousness inquiry has not been set forth for these claims. The only rationale for rejecting these claims, despite the fact that UK 4599 and FR 1,028,488 neither disclose nor suggest the claimed shaped extensions of the outer peripheral surface of the drive member, is that the claimed extensions 1) do not solve any stated problem; 2) do not have any particular purpose; and 3) that the abutment surface allegedly would perform equally well with an extension that extends for any desired range.

However, there is no requirement in 35 U.S.C. §103(a) that a claimed structure solves any particular problem, be directed to any particular purpose, or have any particular operating characteristic. It is sufficient that the structure be useful and nonobvious. No precedent has been cited for the alleged basis for rejection, and any alleged precedent to the contrary could result in the denial of patents for completely nonobvious structures. Such a result would be completely at odds with the requirements of 35 U.S.C. §103.

Claims 21-25, 43 and 48 were rejected under 35 U.S.C. §103(a) as being unpatentable over UK 4599 in view of FR 1,028,488 and Hsu (US 5,609,536). This basis for rejection is respectfully traversed.

Like claim 38, independent claims 24 and 48 have been amended to clarify that the crank arm recited therein does not form part of a crank axle dimensioned to extend into a bottom bracket shell of the bicycle. That is directly opposite the purpose of the device shown in UK 4599, and there is nothing in FR 1,028,488 or Hsu that would motivate one of ordinary skill in the art to modify the device disclosed in UK 4599 in a way that would still retain the objective of that reference.

Claims 35 and 45 were rejected under 35 U.S.C. §103(a) as being unpatentable over UK 4599 in view of FR 1,028,488 and Liu (US 4,630,503). This basis for rejection is respectfully traversed.

Claim 35 has been amended to clarify that the crank arm recited therein does not form part of a crank axle dimensioned to extend into a bottom bracket shell of the bicycle. That is directly opposite the purpose of the device shown in UK 4599, and there is nothing in FR 1,028,488 or Liu

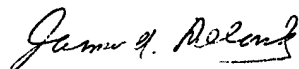
that would motivate one of ordinary skill in the art to modify the device disclosed in UK 4599 in a way that would still retain the objective of that reference.

Claim 7 was rejected under 35 U.S.C. §103(a) as being unpatentable over UK 4599 in view of Yang (US 5,083,991). This basis for rejection is respectfully traversed.

Claim 7 has been amended to clarify that the crank arm recited therein does not form part of a crank axle dimensioned to extend into a bottom bracket shell of the bicycle. That is directly opposite the purpose of the device shown in UK 4599, and there is nothing in Yang that would motivate one of ordinary skill in the art to modify the device disclosed in UK 4599 in a way that would still retain the objective of that reference.

Accordingly, it is believed that the rejections under 35 U.S.C. §102 and §103 have been overcome by the foregoing amendment and remarks, and it is submitted that the claims are in condition for allowance. Reconsideration of this application as amended is respectfully requested. Allowance of all claims is earnestly solicited.

Respectfully submitted,



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